

SILRES® HP1000

Silicone Resin

Characteristics

SILRES® HP1000 is a glycidoxyl functional silicone polymer, which is used as a binder to increase UV resistance and corrosion resistance of two component coating formulations.

This patented* technology combines the chemical resistance and adhesion of an epoxy resin with the UV and high temperature resistance of a silicone polymer into one product. The incorporation of phenyl substituents on the silicon atom increases high temperature resistance and chemical resistance of the polymer. In addition the phenyl substituent increases the compatibility of the silicone with organic polymers such as acrylics, fluorocarbons, and polyesters. The use of difunctional dimethyl groups increases the flexibility of the coating which increases the resistance of the polymer to cracking.

Properties

Typical Property values are not intended for use in the preparation of specifications. Please contact Wacker Silicones Corporation for assistance and recommendations before writing specifications on this product.

Processing

SILRES® HP 1000 can be used as a binder to make high solids or solvent-free exterior durable coatings for the Marine, Architectural, and Industrial Protective Coatings Market. Coatings made using this product can be applied directly to zinc-rich coatings, bare steel or aluminum substrates.

SILRES® HP 1000 has a weight per epoxy between 330-350 grams of polymer per moles of epoxy, which makes it highly reactive with nucleophiles such as phosphoric acid, acid functional acrylics, amine and amino functional curing agents. The degree of replacement of organic binder should be determined through laboratory evaluations. The replacement of the entire polymer side of 2 pack systems with the

SILRES® HP 1000 will increase the UV resistance of the coating. The silicone-epoxy polymer is only a portion of the coating formulation, and therefore to make a exterior durable coating, ceramic pigments, extenders and hardeners designed for exterior applications should be used. The additives and hardeners used should also be UV and corrosion resistant. The hardness and dry time of the coating can be either increased or decreased based on the type of hardener used, and the epoxy to hydrogen ratio. The use of a linear or flexible hardener, such as Jeffamine D400 with approximate amine hydrogen to epoxy equivalent ratio of 1:1 will increase the flexibility of the coating, and prevent cracking.

The use of **SILRES® HP 1000** as the hardener in acid functional acrylic formulations will also improve UV resistance, chemical resistance, and adhesion of the coating. The epoxy to acid ratio should be kept at 0.67-0.74:1. However if a reactive diluent is used such as the **SILRES® SY 231** then the epoxy to acid group equivalents ratio should be increased to 0.85:1

The silicone-epoxy polymer has a relatively low viscosity and has a high functionality, which enable formulators the ability to develop low VOC coatings.

The table listed below represents the typical properties of the supplied resin.

Storage

The shelf life of **SILRES® HP 1000** is six (6) months from the date of shipment provided it is stored in a closed container.

Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Properties	Characteristics
Appearance	Clear liquid, light amber
Weight per epoxy equivalents (grams/mole)	330-350
Active [%]	100
Kinematic Viscosity [cst]	25-40
Density at 25°C, g/ml	1.13
Storage Stability	6 months
Flash Point ASTM D-56	131°F

Additional information**Ordering information**

SILRES® HP 1000 is available in 440 lb. drums.

Truckload orders and Technical inquiries may be directed to:

Wacker Silicones Division
Wacker Chemical Corporation
3301 Sutton Road
Adrian, MI 49221
TEL: + 1 517 264 8500
FAX: + 1 517 264 8246
Email: customercare@wacker.com
www.wacker.com
silicones@wacker.com

For less than truckload orders, please call:

BRENNTAG, Inc. our distributor representative for the United States and Canada:

BRENNTAG - Northeast
Telephone: 610 926-4151
Toll Free: 800 422-8160
Fax: 610 926-4160

BRENNTAG - Southeast
Telephone: 919 596-0681
Toll Free: 800 335-8101
Fax: 919 596-6438

BRENNTAG - Great Lakes
Telephone: 262 252-3550
Toll Free: 800 558-8501
Fax: 262 252-5250

BRENNTAG - Southwest
Telephone: 903 759-7151
Toll Free: 800 945-1858
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BRENNTAG - Mid-South
Telephone: 270 830-1323

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Fax: 270 826-1486

BRENNTAG - West
Telephone: 562 903-9626
Toll Free: 800 479-7626 (Exc. CA)
Toll Free: 800 762-3433 (CA)
Fax: 562 903-9622

Our representative in Canada

BRENNTAG - Canada
Telephone: 416 259-8231
Fax: 416 259-5333

Safety information

Detailed safety information is contained in each material data safety sheet, which can be obtained from our sales offices.

The management system has been certified according to ANSI/ISO/ASQ Q 9001 and ANSI/ISO 14001

For technical, quality, or product safety questions, please contact:

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